

Claims

We claim:

1. A method of operating a signaling processor to process a Signaling System Seven (SS7) message for a call having a called number and a caller number; wherein a first gateway will receive user communications for the call, the method comprising:

5 receiving the SS7 message into an Integrated Services User Part (ISUP) process;

if the SS7 message is an Initial Address Message (IAM), then creating an origination process for the call having data from the IAM;

10 executing the origination process to determine if the caller number is authorized;

if the caller number is authorized, then executing the origination process to determine if the called number is legitimate;

if the called number is legitimate, then executing the origination process to select a second gateway based on the called number;

15 in response to selecting the second gateway, creating a termination process for the call;

executing the termination process to verify that the second gateway can handle the call;

if the second gateway can handle the call, then executing the termination process to select an identifier for routing the call from the first gateway to the second gateway; and

20 transferring a control message to the first gateway indicating the selected identifier, wherein the first gateway receives the user communications for the call and adds the identifier to user communications for the call, and wherein a packet system routes the user communications from the first gateway to the second gateway based on the identifier.

2. The method of claim 1 wherein the signaling processor does not include a switching fabric.

30 3. The method of claim 1 wherein the signaling processor does not receive the user communications.

4. The method of claim 1 further comprising transferring an Address Complete Message (ACM) from the ISUP process.

5. The method of claim 1 further comprising transferring an Answer Message (ANM) from the ISUP process.

6. The method of claim 1 further comprising transferring a Release Message (REL) from the ISUP process.

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7. The method of claim 1 further comprising transferring a Release Complete Message (RLC) from the ISUP process.

8. The method of claim 1 further comprising:

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receiving an Answer Message (ANM) for the call into the ISUP process;
transferring the ANM from the ISUP process to the termination process; and
executing the termination process to process the ANM, and in response,
transferring another control message to the first gateway with instructions to cut-through
the call.

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9. The method of claim 1 further comprising:

receiving a Release Message (REL) for the call into the ISUP process;
transferring the REL from the ISUP process to the origination process; and
executing the origination process to process the REL, and in response, transferring
25 another control message to the first gateway with instructions to terminate the call

10. The method of claim 1 further comprising accessing a Service Control Point (SCP) to process the called number.

11. A software product for operating a signaling processor to process a Signaling System Seven (SS7) message for a call having a called number and a caller number, wherein a first gateway will receive user communications for the call, the method comprising:

software configured to direct the signaling processor to receive the SS7 message into an Integrated Services User Part (ISUP) process, and if the SS7 message is an Initial Address Message (IAM), then to create an origination process for the call having data from the IAM and execute the origination process to determine if the caller number is authorized, and if the caller number is authorized, then to execute the origination process to determine if the called number is legitimate, and if the called number is legitimate, then to execute the origination process to select a second gateway based on the called number, and in response to selecting the second gateway, to create a termination process for the call and execute the termination process to verify that the second gateway can handle the call, and if the second gateway can handle the call, then to execute the termination process to select an identifier for routing the call from the first gateway to the second gateway and transfer a control message to the first gateway indicating the selected identifier, wherein the first gateway receives the user communications for the call and adds the identifier to user communications for the call, and wherein a packet system routes the user communications from the first gateway to the second gateway based on the identifier; and

hardware that stores the software.

12. The software product of claim 11 wherein the signaling processor does not include a switching fabric.

25 13. The software product of claim 11 wherein the signaling processor does not receive the user communications.

14. The software product of claim 11 wherein the software is further configured to direct the signaling processor to transfer an Address Complete Message (ACM) from the ISUP process.

15. The software product of claim 11 wherein the software is further configured to direct the signaling processor to transfer an Answer Message (ANM) from the ISUP process.

16. The software product of claim 11 wherein the software is further configured to direct
5 the signaling processor to transfer a Release Message (REL) from the ISUP process.

17. The software product of claim 11 wherein the software is further configured to direct the signaling processor to transfer a Release Complete Message (RLC) from the ISUP process.

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18. The software product of claim 11 wherein the software is further configured to direct the signaling processor to receive an Answer Message (ANM) for the call into the ISUP process, transfer the ANM from the ISUP process to the termination process, and execute the termination process to process the ANM, and in response, transfer another
15 control message to the first gateway with instructions to cut-through the call.

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19. The software product of claim 11 wherein the software is further configured to direct the signaling processor to receive a Release Message (REL) for the call into the ISUP process, transferring the REL from the ISUP process to the origination process, and execute the origination process to process the REL, and in response, transfer another
control message to the first gateway with instructions to terminate the call

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20. The software product of claim 11 wherein the software is further configured to direct the signaling processor to access a Service Control Point (SCP) to process the called number.